

# iCheck Fluoro

## Measuring Vitamin A in Sugar and Milk Powder

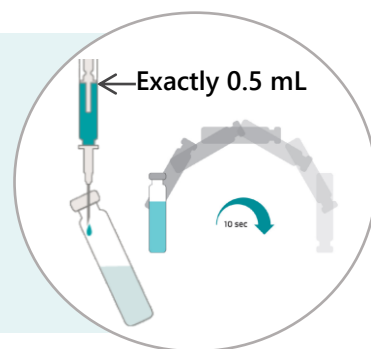


### Sample Preparation

- Weigh in your sample and dilute it with water in ratio 1:20 for samples fortified at 10-30 mg/kg. Decrease the ratio to 1:10 for samples fortified at 5-10 mg/kg.
- Shake the solution until the sample is completely solubilized. Record the final volume for dilution factor calculation.

### Sample Injection

- Shake the suspension again and quickly take up 0.7 mL of the solution into syringe.
- Place the needle on syringe and adjust volume to exactly 0.5 mL.
- Inject 0.5 mL into Fluoro reagent vial and shake the vial vigorously for 10 seconds. Let the vial stand for min. 5 minutes.

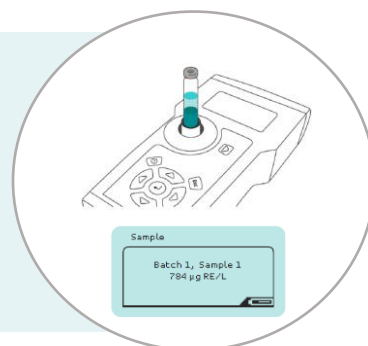


### Phase Separation

- Clear phase separation must be visible in the vial. The upper phase, must be clear without any particles floating or adhered to the inner side of the glass.

### Measurement and Calculation

- Place the vial in the iCheck Fluoro and measure.
- Multiply the result displayed with dilution factor to get concentration of vitamin A in sugar.



References: 2014\_Laillou\_Assessment of a portable device to quantify vitamin A in flour, sugar, milk\_FNB

# iCheck Fluoro

## Calculations

1. iCheck Fluoro measurement range is 50 – 3000 µg/L. If your sample is above this range, you need to dilute it.

Sample Type	Expected Concentration (mg RE/kg=ppm)	Dilution	Sample Weight (g)	Final Diluted Sample Volume (mL)
Sugar or milk powder	5 – 10 ppm	1 : 10	10	100
			50	500
			100	1000
	10 – 30 ppm	1 : 20	5	100
			25	500
			50	1000

2. Dilution Factor (DF) = Total Diluted Sample Volume [mL] / Sample [g]

3. Measured Vitamin A [mg RE/kg] =  
iCheck Fluoro Result [µg RE/L] x DF / 1000

4. Vitamin A Units Conversion

1 mg Vitamin A = 1 mg retinol = 1 mg retinol equivalents (RE)

- 1 mg = 1 000 µg
- 1 mg = 3333 International Units (IU)
- 1 µg = 3.33 IU
- 1 µg = 0.003 µmol

Vitamin A compounds added to foods are

- retinyl palmitate: 1 µg retinol = 1.83 µg retinyl palmitate
- retinyl acetate: 1 µg retinol = 1.51 µg retinyl acetate

5. For the information on the accuracy of the result with iCheck please refer to the Performance Guide.